

**COMMONWEALTH OF MASSACHUSETTS**

**DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY**

Investigation by the Department on its own motion into the appropriate regulatory plan to succeed price cap regulation for Verizon New England, Inc. d/b/a Verizon Massachusetts' retail intrastate telecommunications services in the Commonwealth of Massachusetts

DTE 01-31

**TESTIMONY OF**

**ANTHONY FEA**

**ON BEHALF OF AT&T COMMUNICATIONS OF NEW ENGLAND, INC.**

**PUBLIC NON-PROPRIETARY VERSION**

August 24, 2001

1 **I. INTRODUCTION, QUALIFICATIONS AND PURPOSE OF TESTIMONY**

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3  
4 **Q. PLEASE STATE YOUR NAME AND YOUR OCCUPATION.**

5  
6 **A.** My name is Anthony Fea. My business address is 429 Ridge Road, Dayton, New  
7 Jersey. I am testifying on behalf of AT&T Communications of New England, Inc.  
8 (“AT&T”). I am Division Manager with AT&T Local Network Services, the  
9 organization within AT&T Corp. that provides local service (either entirely or partially  
10 through the use of AT&T’s own facilities) to AT&T business customers of all sizes.  
11 One of the responsibilities I have in my current position is to oversee the planning of  
12 AT&T’s local optical network in the northeastern part of the United States. In general,  
13 it is my responsibility to assist in the development of a capital investment plan which  
14 optimizes the use of limited capital dollars, while at the same time appropriately  
15 controlling expenses and allowing for a return on the company’s investment.

16  
17 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**  
18 **QUALIFICATIONS.**

19  
20 **A.** I am a 1986 graduate of Stevens Institute of Technology, with a B.S. in Electrical  
21 Engineering. Since obtaining my degree, I have worked at a number of  
22 telecommunications firms including Bell Atlantic (now Verizon), Telecordia  
23 Technologies (BellCore), and most recently TCG and AT&T.  
24  
25

1   **Q.    HAVE YOU REVIEWED THE VERIZON MASSACHUSETTS PETITION IN**  
2   **THIS MATTER?**

3  
4   **A.**    Yes. It is my understanding that Verizon Massachusetts (“Verizon”) seeks to have the  
5           Department adopt a new plan of alternative regulation, the “Massachusetts Alternative  
6           Regulation Plan,” which includes the reclassification of all business local exchange  
7           services associated with business customers as competitive services under  
8           Massachusetts law. These services include all switched local services provided to  
9           business customers as well as vertical features provided to these customers. It is my  
10          understanding that Verizon is not seeking to reclassify any access or residential services  
11          at this time.

12   **Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

13  
14   **A.**    The purpose of my testimony is to respond to claims made in the testimony of Verizon  
15           witnesses to the effect that there is sufficient competition in local exchange service  
16           markets to justify the pricing flexibility that Verizon seeks. More specifically, the  
17           purpose of my testimony is to illustrate the ways in which Verizon exerts its monopoly  
18           control over local network facilities. My description of the market is based upon my  
19           point of view as a network engineer of a competing carrier (“CLEC”). I will discuss the  
20           enormous difficulties in building competing facilities and the frequency with which I must  
21           turn to Verizon for those facilities that are required to serve AT&T’s customers, even  
22           though it would be far preferable to use AT&T facilities, both from a cost and service  
23           quality perspective.

1

2 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

3

4 **A.** Section II demonstrates the difficulty AT&T faces in obtaining facilities-based  
5 alternatives to Verizon for the services AT&T provides to its customers. More  
6 specifically, this section addresses AT&T's challenges in building the interoffice network  
7 as well as AT&T's challenges in building the connectivity between the customer and the  
8 network. In Section III, I discuss Verizon's prohibitions on co-mingling and their  
9 detrimental effect on CLECs' ability to compete. Finally, Section IV addresses the  
10 evidence on collocation which Verizon presents to support its Alternative Regulation  
11 Plan. In particular, I discuss why the number of CLEC collocation cages is not an  
12 accurate indicator of CLECs' ability to provide competing services.

13

14

15 **II. FACILITY-BASED ALTERNATIVES TO VERIZON ARE HARD FOR**  
16 **AT&T TO OBTAIN FOR THE SERVICES AT&T PROVIDES TO ITS**  
17 **CUSTOMERS**

18

19 **A. Challenges in Building the Interoffice Network**

20

21 **Q. VERIZON ASSERTS THAT THE DEPLOYMENT OF FIBER, SWITCHING**  
22 **AND COLLOCATION FACILITIES BY CLECS SUPPORTS ITS CLAIM**  
23 **THAT THE LOCAL BUSINESS MARKET IS COMPETITIVE. DO YOU**  
24 **AGREE?**

25

26 **A.** No. While AT&T and other carriers have made significant investments in developing  
27 their own networks, at this early stage of network development, neither the dollars  
28 spent, the number of switches deployed nor the fiber miles laid are accurate measures of

1 the level of competition in a particular market. Instead, they must be considered in the  
2 context of the existing ILEC market power. In its testimony, Verizon refers to the  
3 existence of fiber rings and switches installed by other carriers but fails to demonstrate  
4 that such facilities are used, or could easily be modified, to provide services that are  
5 substitutes for the rate-regulated services at issue in this proceeding.

6 Second, any claim by Verizon that current CLEC facilities can be readily  
7 expanded to serve large numbers of additional customers or broader geographic areas  
8 simply is contrary to AT&T's and other CLECs' experience. While CLEC facilities  
9 may have limited unused capacity, Verizon has not demonstrated that CLECs have all  
10 the requisite inputs available at each site, and I can say from my own experience that  
11 AT&T, at least, does not. For example, the existence of fiber does not necessarily  
12 mean that the CLEC has the electronics to make it operational. Similarly, a collocated  
13 Digital Loop Carrier ("DLC") cannot be expanded beyond the line card slots in its  
14 footprint without processing a new collocation augment application.<sup>1</sup> As I demonstrate  
15 below, both the initial construction, and any expansion, of facilities used to provide local  
16 exchange service is a time-consuming and expensive process. And, even when a  
17 CLEC is willing to make such an investment, it often cannot be accomplished within a  
18 time frame demanded by customers.

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<sup>1</sup> The configuration of a collocation cage is not unlike the configuration of the counters in a kitchen. Each piece of equipment in the collocation has a 'footprint' or space requirement, not unlike the 'footprint' of a blender or a coffee maker. Since space in a collocation cage is limited, the addition of equipment may require the addition of floor space to the cage to accommodate the new equipment's 'footprint.' This addition is comparable to the extension of a counter top to accommodate a new appliance. In the case of collocation space, such augments must comply with Verizon's requirements.

1 Third, I question Verizon's conclusion regarding the amount of fiber actually  
2 deployed for local service by competitive carriers in Massachusetts. It is not unusual to  
3 find counts of fiber miles that fail to distinguish between the fiber deployed by carriers to  
4 support a local network architecture and the considerable amount of fiber deployed by  
5 some of the same carriers and others as long haul facilities to transport interstate traffic.  
6 While fiber is used for both purposes, it is used for very distinct purposes, often by  
7 carriers that do not even offer local service. Therefore, the long haul fiber is not  
8 configured in a way to become a substitute for fiber that is part of the local network.

9  
10 **Q. ACCORDING TO VERIZON, THE FACT THAT CLECS HAVE DEPLOYED**  
11 **SOME FIBER AND SWITCHES TO SERVE CERTAIN CUSTOMERS**  
12 **MEANS THAT CLECS CAN READILY EXPAND TO SERVE NUMEROUS**  
13 **OTHER CUSTOMERS THROUGHOUT THE COMMONWEALTH. DO**  
14 **YOU AGREE WITH THIS POSITION?**

15  
16 **A.** No. Without any support, Verizon's witnesses Mudge, Brown and Taylor essentially  
17 conclude that the presence of a limited amount of fiber and switching facilities transforms  
18 any and all CLECs into ubiquitous providers of local services capable of serving each  
19 and every business customer in all corners of the state. This conclusion demonstrates  
20 either an ignorance of the current marketplace realities and basic network engineering  
21 principles, or it is simply a results-driven analysis.

22 In addition to the barriers I detail in my testimony that have existed since  
23 passage of the Act, this year's changing economic environment has also had a significant  
24 impact on the ability to build new networks. In the past, both the capital markets and  
25 vendors served as ready sources of capital, but now such capital is hard to obtain.

1 While the general downturn in the economy has surely contributed to the problem, it is  
2 just as likely that the inability of CLECs to advance their business plans in the face of  
3 continued and sustained resistance of the ILECs, with their control of markets and  
4 facilities and lengthy regulatory battles, has also played a significant role. Likewise,  
5 vendors (including Nortel and Lucent), faced with their own business uncertainties, have  
6 dramatically changed contract terms from consignment sales of equipment to requiring  
7 cash up front on all purchases. This change alone is likely to have a significant impact  
8 reducing AT&T's purchases of equipment.

9 AT&T's own experience shows that even when facilities have been deployed,  
10 CLECs often remain heavily dependent on Verizon for facilities necessary to serve local  
11 business customers because only Verizon has a ubiquitous network. This is true even  
12 for AT&T, despite having invested billions of dollars on network facilities nationally.  
13 This lack of alternative sources of supply of interoffice transport constitutes a barrier to  
14 offering real competition to ILECs. Moreover, this dependence on Verizon for  
15 bottleneck facilities, including loops, is not addressed in Verizon's proposed Alternative  
16 Regulation Plan.

17  
18

1 **Q. DOES AT&T USE ITS OWN FACILITIES TO PROVIDE SERVICE TO**  
2 **MASSACHUSETTS BUSINESS CUSTOMERS?**

3  
4 A. Yes, in part. The primary means by which such customers are presently served relies in  
5 part on AT&T facilities. AT&T serves a very small number of customers using the  
6 UNE-P but this is intended to be only a transitory mechanism. As soon as practicable,  
7 those customers would be served either entirely through AT&T's own facilities or using  
8 Verizon's unbundled loops.

9  
10 **Q. WHAT ARE THE REASONS FOR USING UNE-P TO SERVE BUSINESS**  
11 **CUSTOMERS?**

12  
13 A. This step has proven necessary for two reasons. First, the manual nature of the 'hot  
14 cut' process required to access an incumbent's loop infrastructure has resulted in  
15 unacceptably poor service quality during the provisioning process, including significant  
16 service outages, higher costs, gated volumes, and customer dissatisfaction. In an effort  
17 to combat (or at least more effectively control) these service quality and economic  
18 impairments, AT&T has implemented a process designed to acquire business customers  
19 via UNE-P, and then subsequently convert large volumes of those customers in a single  
20 central office from a UNE-P product to a UNE-loop product on a coordinated project  
21 basis. Although, in my position I do not deal directly with customers, my experience  
22 has certainly made me aware of the impact of service disruptions on our customers and,  
23 in turn, on our own reputation for quality service. AT&T's own experience supports  
24 these findings. Although AT&T has only just begun to use UNE-P in Massachusetts,  
25 the use of UNE-P in other markets has allowed AT&T to avoid some performance



1 problems associated with the hot-cut process and provision service in a manner that is  
2 closer to the performance levels demanded by customers in the market place.

3 Second, UNE-P also enables AT&T to acquire a sufficient concentration of  
4 business customers in a geographic area to justify the installation of new facilities, or  
5 augmentation of existing switching capacity in areas that AT&T now serves.

6  
7 **Q. DOES THE AVAILABILITY OF UNE-P COMPENSATE FOR THE**  
8 **DIFFICULTIES ENCOUNTERED BY FACILITY-BASED CARRIERS?**

9  
10 **A.** No. While the availability of UNE-P is a complementary mode of competitive entry, for  
11 a facilities-based CLEC like AT&T, it is not an acceptable long-term alternative. First,  
12 it is generally preferable to provide service entirely on AT&T's network. This  
13 preference is based on the ability to control the service from end-to-end, thereby  
14 avoiding reliance on other carriers to maintain service quality and enabling AT&T to  
15 provide the best customer experience. Second, the UNE-P restrictions and the pricing  
16 of UNE-P limit the size and type of business customers who can effectively be served.  
17 UNE-P also poses problems. For example, Verizon's approach to line splitting  
18 severely limits the use of UNE-P as a viable means of competing with its residential and  
19 small business local exchange services.<sup>2</sup>

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<sup>2</sup> It is my understanding that while Verizon has been ordered to make line-splitting available to its competitors, it continues to drag its feet in actually implementing that FCC Order in a manner that provides commercial availability of this service that is comparable to service offered by Verizon. Thereby Verizon limits AT&T's and other carriers' opportunity to meet customer expectations for DSL.

1 **Q. CAN YOU SUMMARIZE HOW AT&T PROVIDES LOCAL SERVICE**  
2 **OVER ITS OWN FACILITIES?**

3  
4 A. Yes. AT&T provides its business customers service using two distinct methods. The  
5 preferred method, referred to as “Type I” provisioning, provides service entirely on  
6 AT&T facilities. AT&T provisions **<BEGIN PROPRIETARY END**  
7 **PROPRIETARY>** of its Massachusetts customer buildings as Type I. In these  
8 situations, AT&T either has, or is economically able to justify  
9 building, facilities to the end-user’s premises. Examples would include the largest, most  
10 sophisticated telecommunications customers, located in concentrated clusters such as  
11 the central business district of metropolitan areas. The second, and most common,  
12 provisioning method is referred to as “Type II” provisioning, and includes the use of  
13 equipment and facilities leased, at least in part, from another carrier, predominantly from  
14 Verizon. Despite AT&T’s strong preference for using Type I facilities, **<BEGIN**  
15 **PROPRIETARY END PROPRIETARY >** of AT&T’s  
16 customers in Massachusetts are served using a Type II arrangement, and of the Type II  
17 arrangements **<BEGIN PROPRIETARY END PROPRIETARY>** of  
18 the equipment and facilities are obtained from Verizon. The inability of AT&T and  
19 other carriers to construct quickly new facilities to meet urgent, sometimes impatient,  
20 customer demand often makes Verizon facilities “the only game in town” and gives  
21 Verizon enormous market leverage.

1 **Q. ARE THERE CONSTRAINTS IN TRYING TO SERVE CUSTOMERS**  
2 **ENTIRELY ON AT&T'S NETWORK?**

3  
4 **A.** Absolutely yes. As detailed below, AT&T still is considerably dependent on Verizon  
5 for facilities in a number of instances because of the constraints when trying to serve a  
6 customer entirely on AT&T's own network.

7           The inability to self-provision these facilities is based on a variety of factors.  
8 For most Verizon wire centers there is insufficient traffic volume to justify building a  
9 facility, *e.g.*, a DS-3 facility. Furthermore, of those wire centers, AT&T does not have  
10 the collocation necessary to self-provision facilities in all of them. And, for those few  
11 instances where the two conditions of sufficient volume and collocation arrangements  
12 are satisfied, there are a number of other factors that preclude a CLEC from serving its  
13 customers entirely over its own facilities: (1) the construction difficulties detailed below;  
14 (2) prior volume and/or term commitments that make it uneconomical to convert from  
15 Verizon facilities because of punitive, termination penalties; (3) exhaustion of collocation  
16 capacity; (4) the distance between the wire center and POP is so far as to make  
17 construction economically infeasible; and (5) municipal constraints such as fees, permits,  
18 applications, "franchise"/ rights-of-way requirements, and restrictions or coordination of  
19 excavation or even moratoriums. Mr. Mudge and Ms. Brown ignore all of these factors  
20 in stating that competitors can "enter the Massachusetts market with vigor"<sup>3</sup> and that  
21 "competitors have complete access to the market with no substantial investment

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<sup>3</sup> Testimony of Robert Mudge, D.T.E. 01-31, at 15.

1 requirements.”<sup>4</sup> There is nothing insubstantial about the barriers facing non-incumbents  
2 and the financial carnage has been compared to the federal banking bailout.

3  
4 **Q. VERIZON SUGGESTS THAT NETWORK CONSTRUCTION CAN BE**  
5 **ACCOMPLISHED EASILY AND IN SHORT ORDER. IS THAT TRUE?**

6  
7 **A.** No. If so, it would be done by now. New network construction is very time  
8 consuming and costly. Often such construction requires cooperation from the local  
9 authorities, other carriers and building owners, and can take months, or even years to  
10 complete. In the competitive market place, customers are seeking service in a much  
11 quicker turn around and, when faced with significant delays from other providers, will  
12 rely on the only supplier able to meet those time constraints – the ILEC. This is  
13 especially true because the construction process often is fraught with hurdles that slow  
14 and, at times, can completely stop deployment.

15  
16 **Q. PLEASE SUMMARIZE THE STEPS INVOLVED WITH DEPLOYING**  
17 **INTEROFFICE TRANSPORT FACILITIES?**

18  
19 **A.** In particular, deploying the new dedicated facility that is necessary to serve the  
20 customer involves four critical steps. First, a CLEC must negotiate a right-of-way  
21 agreement with each of the local municipalities in which the CLEC seeks to provide the  
22 service. Additional permits may be required, for example, where cable will cross over  
23 or under a railroad; other non-obvious governmental authorities also require approval.

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<sup>4</sup> Testimony of Paula L. Brown, D.T.E. 01-31, at 6. In addition, Dr. Taylor casually states that the potential for entry into the market has been demonstrated by “widespread collocation” when, as seen below, evidence shows the falsity of this statement. Testimony of William E. Taylor, D.T.E. 01-31, at 7.

1       Obtaining such consent often involves demands from municipalities for exorbitant fees  
2       and other onerous conditions.

3               Although a typical franchise agreement may take four to six months to negotiate,  
4       AT&T (and previously TCG) has been involved in franchise negotiations (and the  
5       accompanying litigation) that remain unresolved after several years. Such obstacles can  
6       seriously interrupt the choreography of the complicated construction project  
7       management. For example, a collocation may be stranded by municipal obstructionism  
8       of outside plant construction. Further, even once a franchise agreement is reached, a  
9       municipality's ratification process can add as much as 60-90 days before construction  
10      can begin. Such delay can be further aggravated if the scheduled construction start date  
11      is not met, say because of the onset of winter. Therefore, CLECs often incur significant  
12      costs and delays negotiating and, in some cases, litigating these agreements. Too often  
13      the CLEC is left with few choices beyond accepting these burdensome conditions or  
14      foregoing competing to provide service to customers, neither of which supports robust  
15      competition.

16             Another hurdle facing CLECs is the need to negotiate additional agreements  
17      with other parties, including the ILEC that has existing rights-of-way capacity or is  
18      developing new right-of-way capacity on the CLEC's desired route. Additionally,  
19      many municipalities have specific provisions requiring carriers to jointly build facilities  
20      and/or placing restrictions or moratoria on new builds. All of these requirements add  
21      complexity to both the permitting and construction processes.

1 CLECs must also obtain appropriate collocation in order to support interoffice  
2 transmission facilities. As noted above, obtaining collocation is also accompanied by its  
3 own set of challenges including lengthy Verizon request processes, contested space  
4 exhaustion and significant build-out costs. As with any type of construction project,  
5 unforeseen problems including labor and equipment shortages, the level of Verizon's  
6 cooperation, or regulatory issues can delay the completion. Finally, CLECs must  
7 purchase or obtain access to transmission equipment (*e.g.* multiplexers, concentrators,  
8 light terminating equipment, fiber channels or leased high-capacity circuits), dial tone  
9 equipment, DLCs and Switch capacity, and then deploy, activate, and test the  
10 equipment on an end-to-end basis.

11

12 **Q. HOW LONG DOES THIS PROCESS GENERALLY TAKE?**

13 **A.** Even under the most favorable of conditions, it takes a minimum of nine months, and  
14 can easily take twelve months or more, for a CLEC to enter a particular market and  
15 provide service to customers served by a particular central office.<sup>5</sup> However, in many  
16 cases the difficulties described above can add months, and even years to the process.  
17 Further, at times, AT&T may be forced to abandon plans to build within a market  
18 because the obstacles are simply too great, or drag on too long. For example, in one  
19 instance, AT&T has purchased millions of dollars of equipment for local entry, then ran

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<sup>5</sup> The complexity of this process, combined with the significant expense, creates a substantial disparity between ILECs and CLECs, and provides ILECs with a considerable competitive advantage. For example, because ILECs have already developed an extensive interoffice facility network, they generally do not need to seek additional rights-of-way. Where fiber has already been deployed, ILECs can add substantial

1 into conditions imposed by the local government that made it impossible for AT&T to  
2 build necessary facilities. In that case, AT&T chose to relocate the equipment to an  
3 alternative location and delay entry plans in that particular market. Later, after  
4 protracted litigation, the conditions were found to be unlawful and AT&T had to  
5 scramble to obtain the necessary resources to enter the market in that location.

6 On the other hand, to the extent ILECs are required to modify existing plant to  
7 serve a particular customer, they are generally only limited by factors largely within their  
8 own control, for example, work force issues or factors that can largely be mitigated by  
9 workarounds available to the incumbent.

10  
11 **B. Challenges in Building the Connectivity Between the Customer and the**  
12 **Network**  
13

14 **Q. DO SIMILAR BARRIERS EXIST WHEN PLANNING TO PROVIDE**  
15 **FACILITIES TO THE CUSTOMER PREMISES?**  
16

17 **A.** Yes. Because loops generally serve only a single location and only one or a few  
18 customers at that location, it is more difficult to identify accurately instances where the  
19 potential demand, costs to build, and difficulty of building indicate a prudent investment.  
20 Moreover, in addition to all the impairments involved in deploying interoffice transport,  
21 the added requirement of negotiating building access applies when building a loop  
22 facility is planned. Often, due to the urgency of service delivery, it proves impractical or  
23 impossible to negotiate access to the entire building (thereby requiring additional

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capacity by merely changing electronics in the central office. This is far less cumbersome than the steps that a CLEC must complete to get the same capacity.

1 negotiation addressing access and compensation) with the result being that only “fiber to  
2 the [particular] floor” may be deployed. Depending on the relative negotiating power of  
3 the commercial tenant versus the landlord, the landlord, recognizing the time urgency,  
4 may seek unreasonable rates, terms and conditions from the newly entering CLEC. As  
5 a practical matter, because of its incumbency and market dominance, a similar approach  
6 is not possible with Verizon. This result clearly limits the CLEC’s ability to serve other  
7 customers in the same building, and even to economically or timely serve the anchor  
8 tenant.

9  
10 **Q. DOES THE FACT THAT A BUILDING MAY BE ON A CLEC NETWORK**  
11 **MEAN THAT ALL THE TENANTS IN THE BUILDING ARE READILY**  
12 **AVAILABLE TO THE CLEC?**

13  
14 **A.** No. A carrier does not truly have a building on its network (“on-net”) unless it can  
15 obtain space in the vicinity of the building terminal (i.e., a means to cross-connect to  
16 facilities serving all customer in a premises) or in the alternative is provided space and  
17 on-premise conduit/riser capacity to place its own equipment and run its own facilities.  
18 Rather, the competitor may only be able to serve one particular customer within a  
19 building because it has found it necessary to run fiber to the floor where a particular  
20 customer is located. As a result, multiple carriers may be serving a single building, but  
21 only the ILEC has essentially ubiquitous access to all the end-users within the building.

22  
23 **Q. DO THESE HURDLES CREATE ANY OTHER DIFFICULTIES FOR**  
24 **MARKET ENTRY?**  
25



1     **A.**     Yes. In general, customers will not wait extended periods of time to obtain service  
2             because they usually seek new services or added capacity to address immediate  
3             business needs. Because of its prior (and current) position of being virtually the only  
4             provider of local services, the ILEC generally stands ready and waiting to provide  
5             service over its existing facilities. Although a customer might prefer to use an alternative  
6             provider, the need for service immediately often trumps that preference.

7  
8     **Q.     WHAT COSTS MAY BE INCURRED TO DEPLOY FACILITIES?**

9  
10    **A.**     New construction requires significant capital investment. The decision to invest capital in  
11             new construction is based on fairly simple business case principles. AT&T balances the  
12             amount of money needed for the construction<sup>6</sup>, the maximum contributions that could  
13             result from such constructions, the availability of capital, the average payback time on  
14             the capital, and the potential risks and returns of other projects competing for the same  
15             limited constructions dollars. As part of the business case, AT&T considers existing  
16             facilities, including Local Serving Office (“LSO”) locations, and how new construction  
17             will maximize the usage of those facilities. AT&T then must balance these factors  
18             against both the customer’s willingness to wait for facilities and to enter into a term  
19             contract sufficient to meet AT&T’s cost recovery guidelines.

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<sup>6</sup> Among the costs that are included in the business case analysis are: (1) rights-of-way costs; (2) the type of construction (e.g., conduit, underground, aerial, etc.); (3) the length of the facility; (4) availability of collocation space; (5) the complexity of connecting to the existing network; and (6) the feasibility of providing redundancy or diversity.

1 **Q. DOES THE FACT THAT A CUSTOMER IS LOCATED NEAR EXISTING**  
2 **CLEC FACILITIES MEAN THAT THE NETWORK CAN BE EXTENDED**  
3 **TO MEET THAT CUSTOMER?**

4  
5 **A.** No. Proximity to the CLEC network is not the only criteria for a reasonable extension  
6 of the network. In virtually all cases of CLEC self-provision of dedicated transport a  
7 SONET<sup>7</sup> ring architecture is used. A “SONET ring” is a form of ‘self-healing’ network  
8 architecture that provides unique reliability for customers because it employs diverse  
9 routing to ensure continued service even when particular segments of the ring are  
10 accidentally cut or experience other technical difficulties. Generally, this diverse routing  
11 is accomplished by constructing two physically separate fiber paths in a closed chain or  
12 ‘ring’. The key fact to note is that route diversity often results in doubling the difficulties  
13 a CLEC must overcome before the project even begins. To implement a redundant  
14 network design, CLECs often need multiple rights-of-way, and may have to negotiate  
15 access to each of these rights-of-way with one or more entities, including municipalities,  
16 ILECs or other parties. Thus, in almost all cases, building into a single, new location  
17 must generally be addressed on two separate routes. Therefore, connectivity is not truly  
18 established until the later of the two routes is complete. As a result, even where AT&T  
19 has chosen to build, it will frequently opt to employ ILEC facilities to complete a ring or  
20 to provide a diverse route in order to expedite service delivery.

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<sup>7</sup> Synchronous Optical NETwork, (“SONET”).

1 **III. VERIZON'S PROHIBITIONS ON CO-MINGLING UNDERMINES THE**  
2 **CLECS ABILITY TO COMPETE**

3  
4  
5 **Q. WHAT OTHER OBSTACLES CONFRONT CLECS WISHING TO SERVE**  
6 **BUSINESS CUSTOMERS?**

7  
8 **A.** As noted above, while AT&T prefers to serve customers entirely on its own network, in  
9 a majority of cases it must rely on facilities leased from other carriers, most often the  
10 ILEC, to serve customers.<sup>8</sup> Network engineering principles, common sense, and the  
11 realities of the competitive market place require that a carrier's network be designed  
12 and utilized in the most efficient manner. Unfortunately, Verizon's prohibitions on mixing  
13 access services and UNEs on the same facilities present a significant impediment to  
14 CLEC's ability to attain these efficiencies when they cannot build their own facilities.  
15 Although I understand that historic pricing principles, including special access charges,  
16 have, in the past, provided an artificial distinction between facilities used for local and  
17 long distance service, these distinctions are the function of regulatory control and  
18 contrary to efficient network design principles. When configuring a network and making  
19 decisions regarding the size and number of facilities needed to optimize network  
20 performance, the type of service or class of customer for the communications carried on  
21 the facilities makes no difference. In essence, an engineer views all traffic as traffic—a  
22 minute is a minute. The engineer's objective is to maximize the electrons or photons that

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<sup>8</sup> The availability of alternate providers is often limited by coverage area, service quality and price. More recently, AT&T has had to face the risk that suppliers will withdraw from the market, file for bankruptcy protection or liquidate assets in a manner that invalidates AT&T's contracts. Additionally, due to the perceived uncertainties of many third-party providers, AT&T customers often specify that AT&T may use only its own facilities or that of the ILEC.

1 pass over a particular facility, while still maintaining the integrity of the communications,  
2 all at the minimum cost.

3 Under Verizon's policy, CLECs are limited to the use of unbundled network  
4 elements ("UNEs") combinations for special access services to those situations in which  
5 the requesting carrier uses the combinations to provide "a significant amount of local  
6 exchange service" to a particular customer.<sup>9</sup> Additionally, I am aware that FCC  
7 Orders temporarily prohibit 'co-mingling' or the otherwise completely technically  
8 feasible linking of loops or loop-transport combinations with tariffed special access  
9 services. The application of this limitation requires CLECs to artificially bifurcate the  
10 configuration of their network in a manner that is contrary to best engineering practices.  
11 It is also inconsistent with the comparable use of facilities by ILECs—especially ILECs  
12 who have obtained 271 approval and thus offer a combined local/long distance service  
13 over a combined network. This only serves to increase CLEC unit costs vis-à-vis the  
14 ILEC, who already has massive economies of scale that CLECs cannot hope to  
15 reproduce in the near term.<sup>10</sup>

16  
17 **Q. WHY IS THE LIMIT ON "CO-MINGLING" A BARRIER TO ENTRY?**

18 **A.** The ban on 'co-mingling' essentially requires CLECs seeking to use UNEs as part of its  
19 total service to its customers to create duplicative, parallel networks within the existing

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<sup>9</sup> I am limiting my discussion of the FCC's Orders to the issue of co-mingling, and do not address the practicality of the "safe harbors" defined by the Commission in its Clarification Order issued June 20, 2000. The practicality of using the safe harbor provisions is addressed in the testimony of Deborah S. Waldbaum.

1 ILEC network. Obviously, this drives down utilization rates, driving up the CLEC's unit  
2 costs. Under AT&T's existing practices, all traffic from individual customers is moved  
3 from the customer premises to the local serving office (either by DS0 or DS1 facilities),  
4 where it is combined with other traffic onto a higher capacity facility (e.g. a DS3) and  
5 then moved either directly to the AT&T network or routed to an AT&T collocation  
6 within another ILEC LSO, where sufficient volumes permit connection to the AT&T  
7 network in a reasonably efficient manner.

8           The most efficient use of these facilities is to fill them at or near capacity (24  
9 circuits for a DS1 and 28 DS1s or 672 circuits for a DS3) before adding additional  
10 trunk capacity.<sup>11</sup> By using facilities in this manner, under ordinary engagement, both the  
11 CLEC and the ILEC benefit by not requiring part of the existing network to be  
12 artificially 'stranded' and in turn, made unusable. If only one party – the ILEC – may  
13 gain these efficiencies, all other parties are at a cost disadvantage. And this  
14 disadvantage is exacerbated when the only party that can maximize the use of its  
15 facilities is the very same party that has a cost advantage due to the much larger facilities  
16 it can justify because of its virtual monopoly in the local market. Further, in  
17 Massachusetts where Verizon has obtained authority to enter the long distance market,  
18 it now has the opportunity to add to their economies of scale while their competitors are

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<sup>10</sup> In this respect, the imposition of use restrictions raise the CLEC cost structure and reduce the ability of CLECs to be price competitive. Further, these limitations waste scarce facilities.

<sup>11</sup> Of course, due to customer churn, vagaries of demand and the need for maintenance channels, a facility is rarely utilized to the maximum extent of its capacity.

1           forced to operate with sub-optimized networks. For example, consider the customer  
2           impact, including cost and customer satisfaction, that would be required for every  
3           residential customer to have two telephone lines, so as to limit ‘co-mingling’ of their  
4           local and long distance services.

5  
6           **IV. THE NUMBER OF COLLOCATION CAGES IS NOT AN ACCURATE**  
7           **INDICATOR OF CLECS’ ABILITY TO PROVIDE COMPETING SERVICE**  
8

9

10          **Q. VERIZON ALSO POINTS TO COLLOCATION AS EVIDENCE OF EASE**  
11          **OF ENTRY AND COMPETITIVE PRESENCE. DO YOU AGREE WITH**  
12          **THIS CLAIM?**

13

14          **A.** No. As demonstrated below, completing a collocation arrangement is not an easy or  
15          inexpensive proposition. Verizon greatly overlooks and underestimates the difficulties  
16          that CLECs have in obtaining collocation. Verizon originally sought to impose two-  
17          year forecast requirements on CLECs,<sup>12</sup> and currently requires six month forecast  
18          requirements in order for the CLEC to obtain the 76 business day provisioning interval  
19          prescribed in Tariff No. 17.<sup>13</sup> Yet, Verizon still claims that collocations can readily be  
20          expanded or obtained. Moreover, Verizon presents no evidence that collocation  
21          arrangements are being used to provide services that compete with its rate-regulated  
22          business services. Nor does Verizon present evidence demonstrating how a collocation  
23          arrangement being used to provide a data or high capacity service can be readily and

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<sup>12</sup> New England Telephone, D.T.E. 98-57 (March 24, 2000), at 173-174.

<sup>13</sup> Order on Motion of Verizon for Reconsideration and Clarification, D.T.E. 98-57 (September 7, 2000), at 67.

1           inexpensively used to provide services that could compete with the rate regulated  
2           business services at issue in this proceeding.

3   **Q.    DOES THE NUMBER OF COLLOCATIONS MEAN THAT THERE IS**  
4   **WIDESPREAD ENTRY AND COMPETITION IN THE BUSINESS LOCAL**  
5   **EXCHANGE SERVICES THAT VERIZON SEEKS TO HAVE DECLARED**  
6   **COMPETITIVE?**

7  
8   **A.**   No. First, Verizon has not provided data that the carriers who have collocated are  
9           providing local voice services that compete with the business local exchange services  
10          Verizon seeks to have declared competitive. Second, a carrier may collocate in  
11          Verizon's central offices for reasons other than to provide local service. For example,  
12          even when data LECs ("DLECs") are collocated in Verizon central offices, most are  
13          not providing local voice service, either residential or business.

14                 Third, the number of collocations is not a reliable indicator of the depth or  
15                 breadth of competition in the local exchange market. A number of providers collocated  
16                 in Verizon's central offices may be serving only a small number of customers without the  
17                 ability, or with limited ability to expand. Moreover, Verizon's reliance on collocation as  
18                 a measure of competition suffers from the same flaw as other "measures" cited by  
19                 Verizon in its effort to find competition where insufficient or no competition exists. In  
20                 fact, many DLECs may have authority to operate in Massachusetts, may have filed a  
21                 tariff, may be collocated and may access UNE-loops, but may not provide, and not  
22                 have any plans to provide, voice service. For example, many DLECs do not have  
23                 telephone numbers, number porting capability, or provisions for E911.

24  
25   **Q.    DOES THIS CONCLUDE YOUR TESTIMONY?**

1

2    **A.**    Yes.